

AMSAT News Service Weekly Bulletins
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SB ALL @ AMSAT \$ANS-069.01
W0-18 WEEKLY STATUS REPORT

HR AMSAT NEWS SERVICE BULLETIN 069.01 FROM AMSAT HQ
SILVER SPRING, MD MARCH 10, 1990
TO ALL RADIO AMATEURS BT

WEBERSAT-OSCAR-18 Picture Taking Continues; Weberware 1.0 Goes To Beta Test

WA3PSD reports that the Ground Command Station at Weber State University (WSU) is receiving pictures from space on a daily basis. This past week the best picture taken was of the coastline of British Columbia near Vancouver Island. Since Weberware 1.0 has the capability to recover the color in pictures from the imaging data stored in memory, the oceans show up with the proper hues as seen by the camera. Initially it was difficult for the WSU students to pin-point the area snapped by the camera, but checking with QUIKTRAK the time the lens shutter was opened, they determined that it was the coastline of British Columbia. The camera on W0-18 can only take a 170 square mile picture (when looking straight down), so at times one has to be very good at geography. Horizon sensor readings are being integrated into the picture taking software on-board W0-18. The horizon sensors can be interpreted to determine when the satellite is pointing at the earth. The software is being changed so that pictures will only be taken at those times. Hopefully, this will mean the end to pictures of deep space or the sun.

W0-18 may be heard on 437.100 MHz (+/- 10 KHz for doppler shift). The alternate frequency is 437.075 MHz.

WA3PSD is pleased to announce that the beta test version of the picture processing software, Weberware 1.0, will be sent out to a group of carefully chosen software testers next week who will perform intensive checks of the software. If no major bugs are discovered radio amateurs can expect to see Weberware 1.0 available from the AMSAT Software Exchange around the first week of April. WA3PSD wants to emphasize that the first priority at WSU is taking care of W0-18 -- after that, getting the image processing software finished is next. The students at WSU are working as quickly as possible to get this very complicated program into a user friendly state. Weberware 1.0 is designed to run on IBM AT clones equipped with EGA or VGA monitors.

Because of the instant popularity of WSU's efforts in the building the WEBERSAT MICROSAT, many grade school and high school students from the greater Ogden/Salt Lake City area are showing up at the Ground Command Station in the evenings to see what is involved in the care and feeding of an OSCAR satellite. The WSU students have enthusiastically embraced the job of explaining to all who enter the finer details of W0-18 and its many on-board scientific experiments. It is hoped that many of these young people will not only become interested in amateur radio but also start thinking about space.

All radio amateurs are encouraged to continue to save picture data from W0-18 and telemetry. If you would like to receive a beautiful QSL card from WSU, send your QSL card, a copy of W0-18 telemetry and a s.a.s.e. to:

WA3PSD
Eng. Tech. Bldg., #236
Weber State University
Ogden, UT
84408-1805

/EX
SB ALL @ AMSAT \$ANS-069.02
ORBITAL DATA MANAGER APPOINTED

HR AMSAT NEWS SERVICE BULLETIN 069.02 FROM AMSAT HQ
SILVER SPRING, MD MARCH 10, 1990
TO ALL RADIO AMATEURS BT

Operational Coordinator for Orbital Data Management Appointed

AMSAT-NA V. P. of Operations, Courtney Duncan, N5BF, announces the appointment of Dick Campbell, N3FKV, AMSAT Operational Coordinator for Orbital Data Management. Dick has already assumed his initial responsibility of collecting, reformatting, and releasing keplerian orbital data for satellites of interest to amateur radio operators on a weekly basis.

As AMSAT continues to progress into an era of tracking and utilizing over a dozen satellites (plus weather satellites), Dick will work to improve both our sources for this information, intermediate processing and checking, and our distribution networks to maximize the usefulness of the information for all involved.

Comments and suggestions should be forwarded to:

Dick Campbell, N3FKV
216 Coventry Drive
Lorena, Texas 76655

Dick does not currently live near a packet BBS so packet mail on the subject of AMSAT Orbital Data Management may be forwarded to him via N5BF @ WB6YMH.

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SB ALL @ AMSAT \$ANS-069.03
ORBIT DATA CHANGES CONSIDERED

HR AMSAT NEWS SERVICE BULLETIN 069.03 FROM AMSAT HQ
SILVER SPRING, MD MARCH 10, 1990
TO ALL RADIO AMATEURS BT

The number of satellites tracked and used by radio amateurs is more than doubling during 1990 and so are the demands on the distribution networks for orbital information. As a result, AMSAT-NA is interested in quantifying its user base and determining their requirements as plans are made to improve the system.

Already, many AMSAT and AMSAT related publications have gone from the familiar "AMSAT Standard" format to the more compact NASA "two line" format to save space. Consideration is also being given to changing to this format for packet radio distribution. For users of PC compatible computer systems with the popular Quiktrak, InstanTrak and Graftrak tracking programs, this poses no problem. These programs are able to make automatic updates of keplerian data from files captured during packet BBS or dial up BBS sessions. Older versions of these programs, programs for other types of computers, and software used in other parts of the world do not have these features, however, and AMSAT is interested in determining exactly what information and formats it should be providing to its broad user base. Interested users are asked to answer the following questions and respond to one of the addresses given below.

NAME _____

CALLSIGN _____

ADDRESS _____

What computers, calculators, or other tracking aids do you use for amateur or weather satellite tracking?

What tracking programs do you use?

What type of orbital data do you use? (AMSAT sets, NASA two-line, equator crossing time and longitude, other - please describe).

How often do you do orbital data updates?

How do you perform these updates? (Manually, tracking program utility)

How many and which satellites do you maintain in your database? How many do you routinely use?

Where do you obtain your orbital data? (AMSAT Nets, Packet BBS, printed publications, mail from NASA, other - please describe).

Please send replies to:

Dick Campbell, N3FKV
AMSAT-NA Operational Coordinator
for Orbital Data Management
216 Coventry Drive
Lorena, Texas 76655

Dick does not currently live near a packet BBS, packet mail responses should be addressed to N5BF @ WB6YMH.

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SB ALL @ AMSAT \$ANS-069.04
SEARCH FOR UO-15 FAILURE MODE CONTINUES

HR AMSAT NEWS SERVICE BULLETIN 069.04 FROM AMSAT HQ
SILVER SPRING, MD MARCH 10, 1990
TO ALL RADIO AMATEURS BT

Volunteers at the Stanford Research Institute (SRI) have been working with the University of Surrey (UoS) to try to determine what may be preventing UO-15 from downlinking telemetry. Martin Sweeting of the UoS reported that SRI is making available a 150 foot dish and its sophisticated signal processing equipment to determine if any of the sub-systems on UO-15 are still operational. If you will remember, SRI has aided UoS in the past by using the same dish to uplink a signal of "sufficient strength" to overcome the desensing of UO-9's command receiver when its two meter transmitter was erroneously turned on.

The signals SRI are trying to receive are the local oscillators on board UO-15. It has been calculated that the receive signal strength of UO-15's LOs are approximately -160 dBm (talk about small-signal work!). A trial run this week of receiving LO signals from the healthy UO-14 was deemed successful, although it required signal analyzers utilizing FFT techniques that provided a 1 Hz resolution bandwidth over a 5 KHz BW to discern the signals. SRI will now try to locate UO-15's LO signals over the next week and from the results of those efforts, the University of Surrey's engineering team will make a determination if it is possible to "pull the cork" on UO-15's transmitter.

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SB ALL @ AMSAT \$ANS-069.05
MICROSAT UPDATE

HR AMSAT NEWS SERVICE BULLETIN 069.05 FROM AMSAT HQ
SILVER SPRING, MD MARCH 10, 1990
TO ALL RADIO AMATEURS BT

Week seven at the AMSAT Satellite factory finds each satellite closer to full commissioning for general use. D0-17 continues to excite newcomers to the world of Amateur Satellites with its ease of telemetry reception. Anyone with a 2 meter FM receiver tuned to 146.825 MHz, a 1/4 wave ground plane antenna (there is no tracking required with this antenna!) and a standard TNC will be able to receive telemetry packets from D0-17. By listening from 8:00 am through 1:00 am and 7:00 pm through 12:00 am local time, you should be able to pick up a number of passes of D0-17. D0-17 transmits packets for about 2.5 minutes followed by an "off period" of about 30 seconds. As is the case with each of the Microsats, the telemetry offers 59 telemetry points and the AMSAT Software Exchange has available programs that translate the data points into more easily recognizable information (ie: battery voltage, solar cell current etc.).

A0-16 and L0-19 have been available for digipeating packets. Numerous stations have successfully connected to "DX" (as far as VHF-packet operations is concerned) via these two birds. The Store and Forward capabilities of A0-16 and L0-19 have yet to be enabled, pending further testing.

The modulation protocol on these two birds is as follows. The TNC must use an external 1200 baud PSK modem rather than the FSK modem that is standard on commercial TNCs. Approximately 100 watts EIRP FM is all that is required to access A0-16 or L0-19. Your downlink receiver must be set to USB or LSB. To digipeat through A0-16 you must use the address PACSAT-1. To digipeat through L0-19 you must use the address LUSAT-1. Below are listed the downlink and uplink frequencies of A0-16 and L0-19:

A0-16	Downlink	437.025	437.050	MHz		
	Uplink	145.90	145.92	145.94	145.96	MHz
L0-19	Downlink	437.150	437.125	MHz		
	Uplink	145.84	145.86	145.88	145.90	MHz

/EX

Posted: Sun, Mar 11, 1990 12:14 AM GMT Msg: FGJA-4192-8386
From: CDUNCAN
To: is
Subj: ORBS improvements

Next week, we plan to divide the OSCAR ORBS bulletin into digital and analog, 6 satellites each (with F0-20 in both). This should relieve some of the packet mail congestion by making smaller bulletins.

I assume that the problem is length of bulletins, not number of bulletins.

73, Courtney, N5BF